Mansfield-Johnson Amateur Radio Service and Johnson County Amateur Radio Club Use of the 3.4 and 5.8 GHz Spectrum

The Mansfield-Johnson Amateur Radio Service and the Johnson County Amateur Radio Club operate mesh wireless computer networks on 3.4 GHz and 5.8 GHz in southeast Tarrant and northern Johnson Counties that serve significant portions of those two counties, two emergency operations centers, and numerous cities and communities in these areas.

The Mansfield-Johnson group (MJARS) is hosted by the Mansfield Fire Department and Mansfield's Emergency Operations Center. Captain Greg Cutler is Mansfield's Emergency Manager. The City of Mansfield has a population of 71,000 and the overall population of the SE Tarrant County area which the major portion of our mesh network covers is 110,000. This includes southeast Arlington, far southwest Grand Prairie, and smaller towns like Kennedale and Rendon. Our mesh network in this area provides live video feeds from five weather spotting cameras which link directly to the Mansfield and Johnson County EOCs. These cameras can also be viewed by other first responders and others anywhere there is Internet or cell service by sending video through our mesh network and then through our Internet gateways, making our camera video feeds available outside of our direct mesh coverage area. High speed backup Internet service is also linked to these EOCs through the three Internet to mesh gateways that MJARS maintains and one that JCARC maintains through our mesh network. Additional services our mesh system carries are VoIP phone and repeater linking, chat, and APRS for tracking assets in the field.

Other public officials in the City of Mansfield who are familiar with our mesh network and understand and appreciate the service it provides are Assistant Chief Peterson, Arson Investigator Roy McLearly. Mayor David Cook, and City Council person Larry Broseh.

MJARS mesh weather cameras recorded a tornado on January 15, 2017, which allowed advance warning to our citizens. Additional video at another time was submitted by the Mansfield Fire Dept and aired on local TV channel 4 weather. The recent storm outbreak in North Texas in October, 2019, was tracked by our cameras and storm spotters, and relayed to Ellis County where the storm developed into a tornado causing major damage in Northern Ellis County. Ellis County ARC's own mesh camera caught the lowering of the funnel and power flashes it caused. One year ago a large grass fire between Mansfield and Midlothian was monitored by one of our cameras and watched by our EOC manager.

MJARS, in conjunction with the Johnson County ARC, also has a weather spotting camera on a radio broadcast tower in downtown Cleburne, linked by mesh on 3.4 GHz to their EOC and also linked to the Mansfield system. Cleburne's population is 30,000 with another 10,000 nearby rural residents who would be impacted by the elimination of our mesh service. Johnson County's emergency manager is Jamie Moore.

David Darcy, KF5LKG, works at the Ft. Worth office of the National Weather Service in the event of severe weather. He is also an MJARS member and has working knowledge of our mesh network and the service it provides our area and the NWS.

Jack McMurry, KF5WJB, Bill Galloway, KF5YIV, and Rick Baker, KG5SRM are all Mansfield CERT team members, Jack being the Mansfield Team Leader. They all operate nodes on our mesh system and make extensive use of the services it provides.

We are currently working with the City of Burleson in Johnson County, population 47,000, and the Burleson ISD to install 3.4 GHz mesh network assets in their city for storm spotting and emergency communications and are awaiting final approval. We have met with Fire Chief K.T. Freeman, Police Chief Cordell, and Arson Investigator Jessica Eiswald (CERT) concerning installing mesh equipment using 3.4 GHz on a water tower or other city structure, and we have also met with Burleson ISD IT/Security director Steve Logan about installing a mesh node and camera at the Burleson ISD stadium for early storm warning, also pending final approval.

We depend on low cost, off-the-shelf, wifi and WISP equipment that can be easily modified, and no such equipment exists for the 3.1-3.3 GHz allocation that has been suggested in the FCC proposal as a possible remedy. Loss of the 3.4 GHz spectrum would make it impossible to link our assets on that band. Additionally, modification of the 5.8 GHz band that included shared use with part 15 or other services would reduce the effectiveness of our links on that band to the point that the longer links we have (and those we are developing) would not be possible, and the shorter links would no longer be capable of the high speed connections necessary to provide adequate service to our served agencies. If the two current proposals are approved, we would seek reimbursement of the cost of our equipment, since it would be rendered useless, or compromised at best. That reimbursement amount would total $3000 for the Mansfield group and $1500 for the Johnson County group.

Please consider rejecting these two proposals and seek spectrum elsewhere to satisfy present needs, perhaps 3.1-3.3 GHz? Or perhaps use 3.1-3.35 GHz, taking just 50 MHz away from the Amateur Radio Service? That would free up the entire 250 MHz needed to satisfy the Mobile Now Act, and it would all be in one contiguos segment.

The direction of ham radio is leaning ever more toward digital modes. High-speed digital, still a fairly new branch of ham radio, is taking off. Newer, younger hams who often already possess computer skills gravitate easily to these digital modes. Many then enter professions in computer and information technology. Curtailing their opportunities by eliminating our use of this spectrum would limit their possibilities, therefore being a disservice to the public.

Sincerely, on behalf of the Mansfield-Johnson Amateur Radio Service
and the Johnson County Amateur Radio Club,

David Erickson, KB5UGF